

THERE IS CLAIMED:

1. An optical switch for an optical network using wavelength division multiplexing, said switch including:
  - p1 input ports receiving p1 respective wavelengths, p2 output ports, and first switching means for switching the wavelengths received at said p1 input ports selectively to said p2 output ports, and/or
  - q1 input ports receiving q1 respective bands of wavelengths, q2 output ports, and second switching means for switching the bands of wavelengths received at said q1 input ports selectively to said q2 output ports, and/or
  - r1 input ports receiving r1 respective groups of bands, r2 output ports, and third switching means for switching the groups of bands received at said r1 input ports selectively to said r2 output ports,said switch including at least two of said first, second and third switching means, which consist of a single switching matrix able to couple any of said  $p1+q1+r1$  input ports to any of said  $p2+q2+r2$  output ports.
2. The switch claimed in claim 1 including an internal rearrangement area including, on the one hand, a set of group of bands to band demultiplexers and/or band to wavelength demultiplexers, and, on the other hand, a set of wavelength to band multiplexers and/or band to group of bands multiplexers.
3. The switch claimed in claim 2 further including an input interface consisting of a set of group of bands to band demultiplexers and/or band to wavelength demultiplexers and an output interface consisting of a set of wavelength to band multiplexers and/or band to group of bands multiplexers.
4. The switch claimed in claim 3 wherein said output interface further includes wavelength converters and/or bands of wavelength converters and/or regenerators.